

U.S. Patent Application Serial No. 10/511,450
Amendment filed July 28, 2009
Reply to OA dated April 28, 2009

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (Currently amended): A reflow soldering apparatus comprising a conveyor adapted to travel in a plane along a transport line so as to transport circuit boards mounted with electronic components into multiple chambers contained in the apparatus, blowing means installed in said chambers, ~~[[and]]~~ each blowing means having a rotating shaft perpendicular with respect to the plane of travel of the conveyor ~~vertical rotating shafts respectively~~, a first casing member having a fan storage section housing said blowing means and a gas guide section extending from said fan storage section in a direction perpendicular to ~~[[a]]~~ the transport line of said conveyor, a second casing member connected to said gas guide section of said first casing member and having multiple heated gas nozzle holes on the side facing said conveyor, and a gas circulated by said blowing means and heated while passing through a heater installed within said apparatus and entered said second casing member from said gas guide section of said first casing member to be blown from said nozzle holes onto said circuit boards on said conveyor, wherein said blowing means are arrayed offset to the left and right in a plane that is parallel to the plane of travel of the conveyor such that~~[[,]]~~ said adjacent blowing means are installed to overlap a line that is perpendicular to the transport line of the conveyor in the plane that is parallel to the plane of travel of the conveyor as seen horizontally, and said first casing member and said second casing member have a width smaller than the diameter of said blowing means.

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Claim 2 (Canceled)

Claim 3 (Currently amended): A reflow soldering apparatus comprising a conveyor adapted to travel in a plane along a transport line so as to transport circuit boards mounted with electronic components into multiple chambers contained in the apparatus, blowing means installed in said chambers, ~~[[and]]~~ each blowing means having a rotating shaft perpendicular with respect to the plane of travel of the conveyor ~~vertical rotating shafts respectively~~, a first casing member having a fan storage section housing said blowing means and a gas guide section extending from said fan storage section in a direction perpendicular to ~~[[a]]~~ the transport line of said conveyor, a second casing member connected to said gas guide section of said first casing member and having multiple heated gas nozzle holes on the side facing said conveyor, and a gas circulated by said blowing means and heated while passing through a heater installed within said apparatus and entered said second casing member from said gas guide section of said first casing member to be blown from said nozzle holes onto said circuit boards on said conveyor, wherein said blowing means are arrayed offset up and down in a plane that is parallel to the plane of travel of the conveyor such that~~[[,]]~~ said adjacent blowing means ~~are installed to overlap~~ along a line that is perpendicular to the plane of travel of the conveyor ~~as seen vertically~~, and said first casing member and said second casing member have a width smaller than the diameter of said blowing means.

Claims 4-7 (Canceled)

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Claim 8 (Currently amended): A reflow soldering apparatus comprising a conveyor adapted to travel in a plane along a transport line so as to transport circuit boards mounted with electronic components into multiple chambers contained in the apparatus, blowing means installed in said chambers, ~~[[and]]~~ each blowing means having a rotating shaft perpendicular with respect to the plane of travel of the conveyor ~~vertical rotating shafts respectively~~, a first casing member having a fan storage section housing said blowing means and a gas guide section extending from said fan storage section in a direction perpendicular to ~~[[a]]~~ the transport line of said conveyor, a second casing member connected to said gas guide section of said first casing member and having multiple heated gas nozzle holes on the side facing said conveyor, and a gas circulated by said blowing means and heated while passing through a heater installed within said apparatus and entered said second casing member from said gas guide section of said first casing member to be blown from said nozzle holes onto said circuit boards on said conveyor, wherein said blowing means are arrayed offset to the left and right in a plane that is parallel to the plane of travel of the conveyor such that~~[[,]]~~ said blowing means storage sections of the adjacent first casing members ~~are installed to overlap a line that is perpendicular to the transport line of the conveyor in the plane that is parallel to the plane of travel of the conveyor~~ ~~as seen horizontally~~, and said first casing member and said second casing member have a width smaller than the diameter of said blowing means.

Claim 9 (Canceled)

Claim 10: (Currently amended): A reflow soldering apparatus comprising a conveyor adapted to travel in a plane along a transport line so as to transport circuit boards mounted with electronic components into multiple chambers contained in the apparatus, blowing means installed in said chambers, ~~[[and]]~~ each blowing means having a rotating shaft perpendicular with respect to the plane of travel of the conveyor ~~vertical rotating shafts respectively~~, a first casing member having a fan storage section housing said blowing means and a gas guide section extending from said fan storage section in a direction perpendicular to ~~[[a]]~~ the transport line of said conveyor, a second casing member connected to said gas guide section of said first casing member and having multiple heated gas nozzle holes on the side facing said conveyor, and a gas circulated by said blowing means and heated while passing through a heater installed within said apparatus and entered said second casing member from said gas guide section of said first casing member to be blown from said nozzle holes onto said circuit boards on said conveyor, wherein said blowing means are arrayed offset up and down in a plane that is parallel to the plane of travel of the conveyor such that~~[[,]]~~ said blowing means storage sections of the adjacent first casing members ~~are installed to overlap along a line that is perpendicular to the plane of travel of the conveyor as seen vertically~~, and said first casing member and said second casing member have a width smaller than the diameter of said blowing means.

Claim 11 (Canceled)